UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

February 21, 2006

Thais Mazur
North Coast Action
P.O. Box 446
Fort Bragg, CA 95437

Mary Walsh
Sierra Club
P.O. Box 446
Fort Bragg, CA 95437

Dear Ms. Mazur and Ms. Walsh,

Thank you for your letter, dated January 30, 2006, concerning the Georgia Pacific Mill site located at 90 West Redwood Avenue, Fort Bragg, California. I am responding to your letter on behalf of Wayne Nastri, Regional Administrator for the U.S. Environmental Protection Agency, Region 9 (EPA). Your letter asks EPA to consider evaluating the Georgia Pacific Mill site for emergency response and potential listing on the Superfund National Priorities List. Both actions are governed by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601 et seq., and the National Contingency Plan [40 CFR Part 300].

In response to your request, we conducted a preliminary review of previous Superfund investigations of this site. Our records show that EPA conducted a Preliminary Assessment of the Georgia Pacific Mill in 1989. Based on the information collected for the Preliminary Assessment in 1989, EPA determined that this site did not qualify for listing on National Priorities List. As a result, we made a "no further remedial action planned" decision. At the time of this assessment, EPA also found there were no conditions warranting emergency response under CERCLA. A copy of this Preliminary Assessment and decision is enclosed.

I have asked Jeffrey Inglis of our Site Assessment Program to review the 1989 Preliminary Assessment to determine whether current conditions warrant a reassessment and/or emergency response. We expect to complete this initial review within sixty days. Mr. Inglis can be reached at (415) 972-3095.

Sincerely,

Keith Takata, Director
Superfund Division

Enclosure

cc: Mr. David Kennedy
Director of NOAA Office of Response and Restoration

Ms. Patricia Port
Regional Environmental Officer
Department of Interior

Mr. Ryan Broddrick, Director
California Department of Fish and Gam

Ms. Catherine Kuhlman, Executive Officer
North Coast Regional Water Quality Control Board

Dorothy Rice, Deputy Director
Site Mitigation and Brownfields Reuse Program
Department of Toxic Substances Control

NORTH COAST ACTION P.O. Box 446 Fort Bragg, CA 95437 ph: 707-964-7085

Mr. Wayne Nastri
Regional Administrator
USEPA Region IX
75 Hawthorne Street, ORA-1
San Francisco, CA 94105
January 30, 2006

Dear Mr. Nastri,

We are writing to you today regarding our concerns about the toxic legacy on the 434 acre ocean front Georgia Pacific (G-P) Mill Site which closed down operations in November 2002. This site stretches over approximately 4 plus miles of coast line that stretches from Noyo Harbor in the south to Glass Beach State Park (bordering the site) to the North and is bordered by Highway One and the city center of Fort Bragg. Immediately to the south of the site lies the mouth embayment of the Noyo River. The project area is bounded on the north by low-density single-family residential housing. This site has many State parks to the north and south, that support seal haul outs, nesting habitats and other natural resources. The adjoining rocky intertidal marine resources that flank the western side of the mill are specifically identified as ESHA.

For over three years, North Coast Action (NCA), a grass roots community group, has been upholding its mission to practice and encourage participatory democracy of an informed, consulted and involved citizenry. NCA believes that genuine participatory democracy is the *true* heart, soul and strength of a healthy community. We are concerned that the North Coast Regional Water Quality Control Board is the lead cleanup Agency.

Many articles have been written about the mill site in local papers and on February 5, 2005, the San Francisco Chronicle wrote a two page front cover article about the Georgia Pacific mill site including public concerns about the toxic legacy and clean up of the over one-hundred year old industrial site.

Recently, the California Coastal Commission found substantial issue at its December 14th, 2005 meeting in San Francisco regarding the coastal development permit and mitigated negative declaration for the removal of 26 building foundations and interim cleanup measures on the mill site. NCA and the local chapter of the Sierra Club filed the Appeal no. A-1-FTB -05-053 of Georgia-Pacific Corporation Coastal development Permit.

We are asking that the USEPA to evaluate the site under their Emergency Response Authority and for potential listing on the National Priority List.

Here is why we feel it is important the USEPA get involved:

1. <u>There is a lack of site characterization,</u> especially when citizens have brought concerns to the attention of the NCRWCQB.(list of concerns follow)
2. <u>We are concerned that the marine environment is being impacted</u> (and has been) and there are no plans by the NCRWQCB or GP to evaluate the potential marine impacts. Some of the known outfalls include the mill pond, waste water treatment plant (that is not in compliance with state regulations state water board), run off in heavy rain fall into the ocean which occurs at many places, and there is the former spring that is to the north east of the waste water treatment plant that was land filled out to the edge of the bluff. One would have to be at water's edge to see if the spring is currently an outfall. As told to NCA from anonymous informants debris, such as waste

oils and other unwanted materials some of which are believed to be toxic, , from the "hog" were dumped into this spring. Anonymous reports from mill workers say there are three "black holes" including south east of Johnson point and north of the mill pond, where refuse was burned and some of those holes went directly into the ocean. From the heavy industrial use, the bluffs have been denuded and the potential for erosion of the bluffs is significant and could impact rocky intertidal areas at the base of the cliffs.

There are four species known to use the Fort Bragg coast for breeding range which include the Black oystercatcher, Pelagic cormorant, Pigeon guillemot, and western gull. Nesting habitat exists on the mill site for sensitive avian species including the western snowy plover, tri-colored blackbird, tufted puffin, raptors (including osprey), waterfowl, and other migratory species. All migratory bird species are protected by the Migratory Bird Act of 1918.

3. The Coastal Commission hearing on Dec. 14, 2005 upheld the NCA/Sierra Club appeal of the coastal use permit for the planned removal of foundations and contaminated soil citing there was inadequate characterization of the geology and hydrogeology of the area where removal actions were proposed. In addition, there has been a lack of coordination with U.S. Fish and Wildlife Service under the migratory bird treaty act for the evaluation of potential impacts to nesting birds during the removal actions.

4. Human health issues are of concern regarding contamination potentially affecting the coastal trail and future residential land use of the area. The City of Fort Bragg was awarded $750,000 from the legislature for development of the coastal trail and associated public land uses. Georgia-Pacific has also been in negotiations with the Coastal Conservancy to sell 138 acres to the city as public land and open space for $4 million in grants. Success of that project depends on a clean, environmentally sound site.

Records at the state Water Quality Control Board show the mill pond regularly exceeded allowable levels of cyanide by 10 to 20 percent from the 1980s on. In 2001 -- as the mill's power plant burned demolition debris from landfills -- those levels were exceeded by as much as 400 percent. G-P has acknowledged scrubber water from the plant's smokestacks was a main source of cyanide. This pond directly discharges into the ocean. The power plant closed in 2002 after the county sued over smokestack emissions. The company was fined $250,000 for failing to test debris for hazardous materials, and failure to keep records.

PCBs, dioxin-contaminated oils, are another concern. In February 1989, PCBs spilled from a ruptured capacitor at the mill site power plant. NCA was told by anonymous G-P employees that G-P collected its four remaining powerhouse capacitors, and dumped them into the main mill pond, then filled and paved over those sections before they could be examined by the federal Environmental Protection Agency. NCA was also told that G-P orchestrated confidential settlements with former workers who were exposed to PCBs when the capacitors broke.

Other anonymous testimonies stated that state inspections during the G-P years found abundant oily matter soaking into bare earth, a truck wash discharged wastewater to an unlined pit, and pesticide residue was dumped into a dry well at a tree nursery area. Mill operators dumped used wood preservative containing dioxins on the headlands. Ash from the power plant, containing dioxin traces, was also spread there before 1985. In addition, there is an underground grid of eight miles of pipe made of asbestos and concrete, called Transite, laid to distribute fire-

fighting water.

At a public meeting over a year ago, Julie Raming, G-P's field services manager, stated, "We're finding what you might find at a gas station -- hydrocarbons." She said that pollutants consisted of leaked diesel fuel and hydraulic fluid and no other substances had yet been found in concentrations that could be classed as toxic. One of the potential future uses in for residential development and open space – all need clean soils.

Currently, the city is considering redevelopment under the Polanco Act which will result in less stringent regulatory oversight. The City and G-P want to move the project along rapidly without sufficient regulatory oversight. Want to redevelop the site [436 coastal acres] with multiple future land uses and without adequate attention to human health concerns and ecological/marine concerns for the site. NCRWQCB is located in Santa Rosa and has not provided sufficient oversight of previous and on-going investigations.

In our sincere efforts to do the best we can as nonprofit grass roots organizations, we attempt to follow the complex, scientifically demanding regulatory laws. Our goal is to protect coastal resources, public resources and public health while avoiding a special agenda which would limit the multi-use possibilities of this unique northern California headlands.

We are very concerned that the current investigation and future plans for clean-up may negatively impact current and future coastal resources along the four miles of coast which this site includes and may have serious negative health impacts for people, plants and animals that inhabit this coastal environment. We hope that the USEPA seriously considers evaluating the site under their Emergency Response Authority and for potential listing on the National Priority List.

If you have any questions please call 707-964-7085 or 707-964-3094.

Sincerely,

Thaïs Mazur for North Coast Action

Mary Walsh for the Sierra Club, Mendocino

cc:
Mr. Keith Takata
Director, Superfund Division
USEPA Regional Headquarters
75 Hawthorne Street, SFD-1
San Francisco, CA 94105

Mr. Dan Meer
Emergency Response, Planning, and Assessment Branch
Superfund Division
USEPA Regional Headquarters
75 Hawthorne Street, SFD-1
San Francisco, CA 94105

Mr. David Kennedy
Director of NOAA Office of Response and Restoration
1301 East West Highway
Silver Springs, MD 20910

Ms. Patricia S. Port, Regional Environmental Officer
Department of Interior
Office of Environmental Policy and Compliance
1111 Jackson Street, Suite 520
Oakland, CA 94607

Mr. Ryan Broddrick, Director
California Department of Fish and Game
1416 Ninth Street
Sacramento, CA 94814

ecology and environment, inc.
160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415/777-2811
International Specialists in the Environment

MEMORANDUM

TO: Paul La Courreye, EPA Region IX Site Screening Coordinator

FROM: Chris Lichens, Ecology and Environment, Inc. CL

DATE: August 9, 1989

SUBJECT: Completed Work

cc: Marcia Brooks, E & E, Inc.

Attached is the following completed:

PA X PA Review SSI LSI SIRe

Other

Site Name: Georgia-Pacific Corp.

EPA ID #: CAD074654328

City, County: Fort Bragg, Mendocino County

State Recommendation:
(for Reviews only)

FOR EPA USE ONLY

CERCLIS Lead: F

PA-1 Complete
Pal NFRAP
8.30.89

A=EUT=PA=F=A'

a/tm/g-p/cwm

BLW

ecology and environment, inc.
160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415/777-2811
International Specialists in the Environment

PRELIMINARY ASSESSMENT

SUBMITTED TO: Paul La Courreye, Site Screening Coordinator
EPA Region IX

PREPARED BY: Toner Mitchell, Ecology and Environment, Inc.

THROUGH: Tom Beer, Ecology and Environment, Inc.

DATE: August 9, 1989

SITE: Georgia-Pacific Corporation
90 Redwood Ave.
Mendocino County, Fort Bragg, California, 95437

TDD#: F9-8812-023

EPA ID#: CAD074654328

PROGRAM ACCOUNT#: FCA1153PAA

FIT REVIEW/CONCURRENCE: 8/21/89

cc: FIT Master File
Don Plain, California Department of Health Services

1. SITE DESCRIPTION

Georgia-Pacific Corporation (Georgia Pacific) operates a 440-acre sawmill facility at 90 Redwood Avenue in Fort Bragg, California (see Figure 1-1: Site Location Map, T18N, R18W, Section 12). The site has apparently been used as a lumber mill since the 1880s (10) In 1968, the Boise Cascade Corporation-Union Lumber Mill began operating a plywood manufacturing and sawmill (sawing and planing) complex at the site. In 1973, Georgia Pacific purchased the sawmill portion of the site and Louisiana-Pacific Corporation assumed ownership of the lumbermill (wood products manufacturing) portion. Georgia Pacific became the sole owner of the entire facility in 1977 (1). Current operations on-site include planing, rough sawing and finishing.

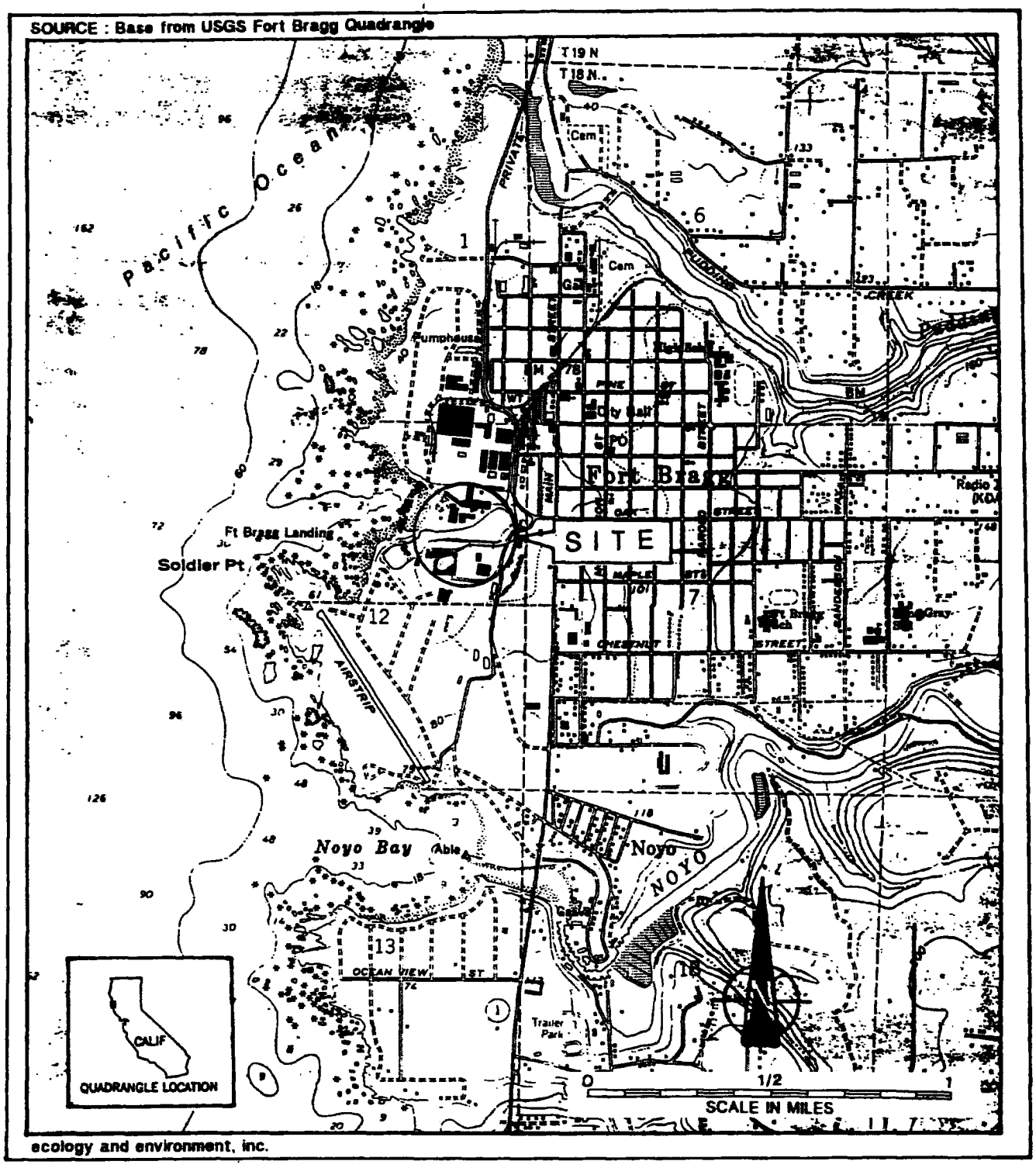


Figure 1-1 SITE LOCATION MAP
GEORGIA-PACIFIC LUMBERMILL

The facility is powered by a cogeneration process where sawdust and wood chips are burned to produce steam in the plant's boilers. Large quantities of water are used in a variety of processes at the site including debarking, cooling, fire prevention and steam production. Stormwater from the streets of Fort Bragg is also directed to the Georgia Pacific site for treatment. Wastewater from the plant's operations is directed through a series of unlined settling and aeration ponds prior to being discharged into the Pacific Ocean (10). The discharge is permitted under Waste Discharge Requirements Order 84-89 and NPDES Permit CA 0005304, issued by the North Coast Region of the California Regional Water Quality Control Board.

2. APPARENT PROBLEM

An October 19, 1979 inspection of the facility by RWQCB revealed that its hydraulic debarker wastewater (a suspected cyanide source) was being discharged directly into the Pacific Ocean, bypassing the facility's settling and aeration ponds (4). In 1979, RWQCB issued Clean-up and Abatement Order 79-196, requiring Georgia Pacific to improve its debarking wastewater treatment. Operations at the Georgia-Pacific lumbermill often result in the generation of cyanide. In 1983, the facility's wastewater discharged to the ocean was sampled and analyzed by RWQCB through Amatec Laboratories, Inc. and found to contain up to 0.75 parts per million of cyanide, 15 times the allowable limit stipulated in the site's Waste Discharge Requirements. This discharge continued to be in excess of permitted limits for more than a year (5).

Several operations at the facility may contribute cyanide contaminated wastewater, to an on-site settling and aeration pond. Leachate from piles of flyash may be a principal source of cyanide at the facility according to RWQCB. Another possible cyanide source is a slime reducing chemical used to control algae growth in the mill's cooling tower (6). The plant's manager does not know of any source of cyanide on-site (10). Another possible cyanide source is stormwater runoff from the streets of Fort Bragg.

Flyash from the facility's cogeneration process is taken to a Georgia Pacific property located about 1 mile northeast of the site where it is used as pasture fertilizer (10). There has been some public concern that this ash may contain dioxins but substantive evidence of dioxin contamination of ash does not exist (2).

A sample of the ash was taken by a local citizen and sent to an unknown lab for analysis. Test results indicated that the sample contained 0.24 parts per billion of octachlorodioxin. This was deemed to be nonhazardous by the California Department of Health Services because it was below the state action level of 10 ppb. Additional samples taken by the same Fort Bragg citizen contained 3.7 ppb of octachlorodioxin (2). While the sampling methods employed were not evaluated by local or state officials for validity, these results indicate the possibility of dioxin contamination of regional soils.

3. HRS FACTORS

3.1 Observed Release

Since regional groundwater is close to the ground surface (2 to 20 feet), there is a significant potential for inadequately contained or overflowing wastewater to percolate to aquifers beneath the site. The potential for an observed release to groundwater is increased by the presence of porous sands, gravels and silts beneath the Georgia Pacific mill (9). The potential for an observed release to groundwater will be further addressed in Section 3.4.

The site is located within 1 mile of three surface water bodies. The Noyo River lies approximately 0.5 miles south of the mill and Pudding Creek lies about the same distance to the north. In addition, the site borders the Pacific Ocean. The only overland migration route for stormwater runoff from the site is toward the sea. The wastewater from the facility's log pond often contains cyanide and, since the pond's effluent eventually reaches the Pacific, actual releases of cyanide to surface water have occured possibly as a result of activities at the mill (6,7).

The entire population of Fort Bragg (pop. 5600) lies within 4 miles of the facility. This discharge is not regulated by any state or local agency (10). The facility's air discharge is steam and smokestack emissions of unknown composition.

3.2 Direct Contact/Fire and Explosion

The Georgia-Pacific lumbermill is completely fenced and guardhouses are posted at all points of access. Public access to the site is strictly limited. Combustible materials on-site include gasoline and diesel fuel. FIT was not able to determine the potential for combustion for these materials.

3.3 Waste Type/Quantity

Several types of waste are handled at the GP facility, all of which are treated in a series of settling and aeration ponds before being discharged into the Pacific Ocean. The mill discharges up to 20,000 gallons of boiler blowdown, 1.08 million gallons of debarker water, and up to 1.3 million gallons of stormwater runoff from its log decks and the City of Fort Bragg into the Pacific Ocean on a daily basis (1).

Wastewater at the plant has been found to contain up to 0.75 parts per million (ppm) of cyanide. Officials from the RWQCB have stated that a possible cause of cyanide production is the fungal breakdown of organic matter such as sawdust, bark, and flyash (5). Stormwater runoff from Fort Bragg may also contain cyanide.

While it is possible that the wastewater sump at from the facility's truck and tractor washpad may contain hazardous components, none have been detected in the washpad's effluent by Georgia Pacific. It is

also possible that petroleum related chemicals may exist in runoff from the facility's log decks since the chains used for moving logs must be lubricated regularly (3).

Flyash from the facility's powerhouse (up to 250 cubic yards per week) is taken to a Georgia Pacific property approximately 1 mile northeast of Fort Bragg where it is added to soils as fertilizer (10). There has been some public concern that the flyash waste contains chlorodioxins. Questions exist regarding the possible threat to groundwater posed by amending soils with dioxin contaminated ash. There is no validated data, however, to indicate that flyash from the facility is contaminated with chlorodioxins (2).

3.4 Groundwater

The Georgia Pacific lumber facility is situated approximately 15 feet above the nearest useable aquifer. The intermediate vadose zone is very porous, being comprised of sand, gravel and silt. Although this aquifer is tapped by approximately 14 private domestic wells in the Fort Bragg area, only two are within 3 miles of the lumbermill facility (12). The City relies on two reservoirs and a surface water intake in the Noyo River to supply all of its water customers. All of these city drinking water sources are located upgradient of the GP facility.

Flyash from the facility, a potential source of cyanide leachate is added to area soils as fertilizer. Some residents also suspect that the ash contains dioxins. Given the possible hazardous nature of GP's flyash waste and the high net annual precipitation in the Fort Bragg area (18 inches), there is a potential for groundwater contamination through percolation of flyash leachate to the underlying aquifer (14).

3.5 Surface Water

The Georgia-Pacific lumbermill lies between the Noyo River and Pudding Creek, approximately 1 mile from each stream. The facility is also adjacent to the Pacific Ocean. All stormwater runoff at the site is directed to the mill's series of setling and aeration ponds before it is discharged to the ocean. Runoff from the City of Fort Bragg also flows into the mill's treatment system (9).

The City of Fort Bragg's drinking water is supplied entirely by surface water. The city operates a surface water intake in the Noyo River approximately 3 miles upstream from the Georgia-Pacific facility. City water supplies are augmented by the Neuman and Simpson Reservoirs, two spring-fed ponds located over 4 miles east of the mill. Although the city water system serves approximately 5,600 Fort Bragg residents with surface water, all water sources are upstream of the mill. Therefore, a target population for the surface water route does not exist (9).

3.6 Air

The primary air discharge from the mill is steam and stack emissions from the facility's boiler and powerhouse complex (10). The entire population

of Fort Bragg lies within 4 miles of the mill, making the air route target population 5,019.

4. PROPOSED REVISED HRS CONSIDERATIONS

The main impact that the facility may have on the surface water route is through the human food chain. Prominent uses of the Pacific Ocean within 15 miles of the facility include shellfish harvesting as well as sport and commercial fishing. According to the Fort Bragg Chamber of Commerce, there are 300 commercial fishing vessels that are registered in Fort Bragg. The yearly take of commercial boats is not known. The consistent occurrence of cyanide releases to Fort Bragg Bay has increased the likelihood of cyanide becoming assimilated into the flesh of salmon, cod and shellfish that are harvested for human consumption.

The facility's Waste Discharge Requirements require that Georgia Pacific conduct a monthly static bioassay using rainbow trout exposed to the site's oceanbound effluent for 96-hours. Fish mortality rates indicate how the facility is affecting the ocean ecosystem. To date, the tests have not shown that the site is having a negative effect on fish (7).

The possibility for on-site exposure to hazardous materials is very low due to a high fence that exists around the perimeter of the site. In addition, the main point of entry to the yard itself is monitored by a full-time security guard (15).

The facility is not located near a sensitive environment. The Menzie's Wallflower is a federally endangered plant species that has been known to occupy the Fort Bragg area, but the city and its environs are not part of its critical habitat (11).

As discussed in the HRS Groundwater section, the groundwater target population is less than 200. Although an expansion of the groundwater target radius to 4 miles, may add to the number of targets; dilution factors associated with this distance would probably reduce the groundwater targets (12).

The facility's daily air discharge consists mainly of steam. This discharge is not regulated by a state, county or local agency (10).

EMERGENCY REMOVAL CONSIDERATIONS

Emergency remedial action does not appear to be warranted at the site.

6. CONCLUSIONS

Georgia-Pacific operates a 440-acre lumbermill complex in a commercial and industrial section of Fort Bragg, California. The facility uses large quantities of water in a variety of on-site operations. Wastewater from these operations is channelled through a series of treatment ponds before being discharged to the Pacific Ocean.

Flyash from the plant's cogeneration powerhouse is suspected to be a main source of cyanide in the facility's wastewater effluent. In addition, a chemical used in controlling slime growth in the facility's cooling tower is also suspected to contain cyanide.

Flyash from the mill is disposed of as fertilizer at an off-site property owned by Georgia-Pacific. There has been some public concern that flyash from the site may contain dioxins, although this has not been substantiated by any validated data.

According to Proposed Revised HRS Criteria, it appears that the facility's most significant environmental impact is on the human food chain. The ocean waters near Fort Bragg are extensively fished and a potential exists for human exposure to contaminants through fish and shellfish consumption.

Nevertheless, the potential impact of the Georgia-Pacific plant on local drinking water sources appears to be low. Although groundwater in the vicinity of the site is fairly shallow, it is not a major source of drinking water for the City of Fort Bragg. In addition, all of the City's main surface water drinking sources are located more than three miles upstream of the facility. The potential air threat is low since the plant's primary air emission is steam. Therefore, the Georgia-Pacific Corporation Lumbermill does not appear to be eligible for inclusion on the National Priorities List due to the following factors:

- o Low groundwater target population,
- o Lack of a surface water target population, and
- o Low air release potential.

7. EPA RECOMMENDATIONS

	Initial	Date
No Further Remedial Action Planned	[signature]	8.30.89
High-Priority SSI		
Medium-Priority SSI		

Notes:

c/tm/g-p/prel

REFERENCES

1. California Regional Water Quality Control Board--North Coast Region, Order No. 84-89, NPDES No. CA 0005304, Waste Discharge Requirements for Georgia-Pacific Corporation Fort Bragg Lumbermill July 26, 1984.

2. Davis, Gerald F., County of Mendocino Department of Public Health, to Dwight Hoenig, California Department of Health Services, letter, February 28, 1987.

3. Petrin, Steven, Georgia Pacific Corporation, to Susan Warner, California Regional Water Quality Control Board--North Coast Region, letter, November 19, 1987.

4. California Regional Water Quality Control Board--North Coast Region, Clean-up and Abatement Order No. 79-189 for Georgia-Pacific Corporation Fort Bragg Lumbermill, October 29, 1979.

5. NPDES Compliance Inspecion Report for Georgia-Pacific Fort Bragg Lumbermill, April 11, 1983.

6. Dzurella, Cecelia, Georgia-Pacific Corporation, to Robert Klamt, California Regional Water Quality Control Board--North Coast Region, letter, June 20, 1983.

7. Neely, Mark, California Regional Water Quality Control Board--North Coast Region, and Toner Mitchell, Ecology and Environment, Inc., telephone conversation, January, 1, 1989.

8. Bridges, Ed, Mendocino County Health Department, and Toner Mitchell, Ecology and Environment, Inc., telephone conversation, January 25, 1989.

9. Steinhardt, John, Fort Bragg Public Works Department, and Toner Mitchell, Ecology and Environment, Inc., telephone conversation, January 25, 1989.

10. Whitman, Don, Georgia-Pacific Corporation Fort Bragg Lumbermill, and Toner Mitchell, Ecology and Environment, Inc., May 24, 1989.

11. Booth, Jack, CA Dept. of Fish and Game, and Toner Mitchell, Ecology and Environment, Inc., telphone conversation, April 14, 1989.

12. SWEEPS Well Information Database, California Department of Health Services, 1988.

13. Climatic Atlas of the United States, U.S. Department of Commerce, Environmental Science Services Administration, Environmental Data Service, June 1968.

14. Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Deparment of Commerce, U.S. Government Printing Office, Washington, D.C., 1983.

15. Mitchell, Toner, Ecology and Environment, Inc., Field Notes from FIT Driveby Inspection, March 10, 1989.

16. List of State Action Levels for priority pollutants.;

CONTACT REPORT

AGENCY/AFFILIATION: Georgia Pacific Lumbermill		
DEPARTMENT :		
ADDRESS/CITY: 90 Redwood Avenue, Fort Bragg		
COUNTY/STATE/ZIP: Mendocino, CA 95437		
CONTACT(S)	**TITLE**	**PHONE**
1. Don Whitman	Plant Manager	(707) 964-5651
2.		
E & E PERSON MAKING CONTACT: Toner Mitchell		**DATE:** 5/24/89
SUBJECT: Background Information		
SITE NAME: Georgia Pacific Corporation		**EPA ID#:** CAD074654328

Mr. Whitman stated that G-P has been operating the Fort Bragg facility since 1973. Boise-Cascade operated a mill at the site before that, starting in 1968. The site has apparently been used as a lumber mill for about 100 years. The facility is powered by a cogeneration process. Sawdust and wood chips are burned in the mills' boiler house to produce steam. Steam is the plant's only air effluent.

The log pond on-site is fed by several sources. Effluent from the mill's debarking process, log debris and cooling tower enters the pond for aeration and chemical treatment before being discharged to the ocean. Stormwater from the streets of Fort Bragg also runs into the pond for treatment. The log pond is not lined. The main treatment of the wastewater consists of aeration although alum is added to neutralize some of the chemical components.

Mr. Whitman said that chemicals are not used in any processes on-site. The chain mechanism on the log deck is oiled regularly so the wastewater effluent from the deck may contain oil residues. The facility's cooling tower is kept algae-free by adding chlorine. He does not know where cyanide may originate and does not believe that it exists in G-P's wastewater.

The flyash from the cogeneration process is taken off-site to Hittle Valley, a G-P owned property located about 1 mile northeast of the site.

a/tm/g-p/cr

CONTRACT REPORT

AGENCY/AFFILIATION: Mendocino County Health		
DEPARTMENT :		
ADDRESS/CITY:		
COUNTY/STATE/ZIP:		
CONTACT(S)	**TITLE**	**PHONE**
1. Ed Bridges		(707) 964-4713
2.		
E & E PERSON MAKING CONTACT: Toner, Mitchell		**DATE:** 1/25/89
SUBJECT: Groundwater		
SITE NAME: Georgia Pacific		**EPA ID#:**

- Not very informative.
- Most of Fort Bragg's water supply comes from Noyo River somewhere upstream.
- Main industries salmon, shellfish, tourism and GP mill.
- Suggested I call city or water plant.
- Some wells in city.

a/tm/g-p/cr

CONTACT REPORT

AGENCY/AFFILIATION: Fort Bragg City		
DEPARTMENT : Public works		
ADDRESS/CITY:		
COUNTY/STATE/ZIP: Mendocino, CA		
CONTACT(S)	**TITLE**	**PHONE**
1. John Steinhardt		
2.		
E & E PERSON MAKING CONTACT: Toner, Mitchell		**DATE:** 1/25/89
SUBJECT: Groundwater		
SITE NAME: Georgia Pacific	**EPA ID#:**	

Mr. Steinhardt said the city's entire water supply comes from:

a) Noyo River 3 miles upstream,
b) Neuman collecting pond (spring fed), and
c) Simpson reservoir (spring fed).

These systems serve 5600 Fort Bragg residents. No known drinking water wells are in Fort Bragg. Georgia Pacific itself has 3 industrial wells on-site. Drinking water is all upgradient of site. Voiced some concern that the plant discharged to the beach.

Wells vary in depth from 2 feet to over 100 feet.

a/tm/g-p/cr

CONTACT REPORT

AGENCY/AFFILIATION: RWQCB North Coast		
DEPARTMENT : Toxics		
ADDRESS/CITY: Santa Rosa		
COUNTY/STATE/ZIP: Sonoma, CA		
CONTACT(S)	**TITLE**	**PHONE**
1. Mark Neely		(707) 576-2220
2.		
E & E PERSON MAKING CONTACT: Toner Mitchell		**DATE:** 1/24/89
SUBJECT: General information on Georgia Pacific		
SITE NAME: Georgia Pacific		**EPA ID#:** CAD074654328

Lumber mill has NPDES permit for ocean discharge. Burns sawdust for energy--waste discharge requirements for sawdust. Could be cyanide on-site. Suggested I talk to Mark Neely regarding file search.

January 30, 1989

Mark Neely, has file on G-P. I will go have a look on Thursday. Fish bioassay tests have shown that the site has not had a negative impact on fish.

a/tm/g-p/cr

FIELD PHOTOGRAPHY LOG SHEET

DATE: 3/10/89

TIME: 11:21 AM

DIRECTION: W

WEATHER: overcast

PHOTOGRAPHED BY:
Toner Mitchell

SAMPLE ID#:

DESCRIPTION: Storage sheds.

DATE: 3/10/89

TIME: 11:22 AM

DIRECTION: N

WEATHER: overcast

PHOTOGRAPHED BY:
Toner Mitchell

SAMPLE ID#:

DESCRIPTION:
Tanks with unknown contents, powerhouse, log deck, sawmill complex.

FIELD PHOTOGRAPHY LOG SHEET

DATE: 3/10/89

TIME 11:19 am

DIRECTION: W

WEATHER: overcast

PHOTOGRAPHED BY:
Toner Mitchell

SAMPLE ID#:

DESCRIPTION:
Logs and boards near log pond; apparent powerhouse in background.

DATE: 3/10/89

TIME: 11:20 AM

DIRECTION: S

WEATHER: overcast

PHOTOGRAPHED BY:
Toner Mitchell

SAMPLE ID#:

DESCRIPTION: Cat shop; machinery maintenance area.

a/tm/chsl/fpls

FIELD PHOTOGRAPHY LOG SHEET

DATE: 3/10/89

TIME: 11:23 AM

DIRECTION: NW

WEATHER: overcast

PHOTOGRAPHED BY:
Toner Mitchell

SAMPLE ID#:

DESCRIPTION: Apparent log deck near sawmill

DATE: 3/10/89

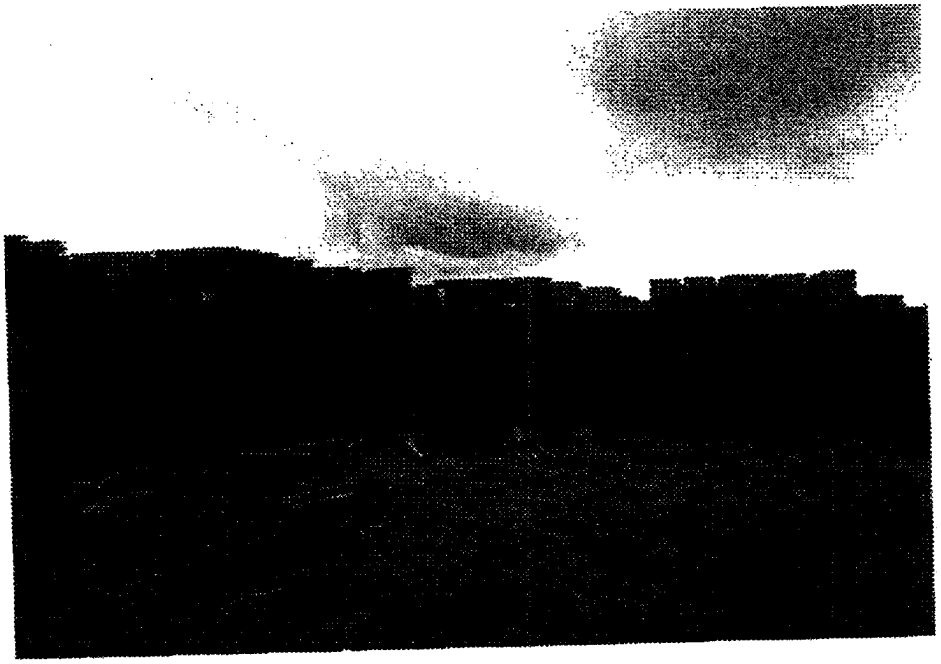
TIME 11:48 am

DIRECTION: SE

WEATHER: overcast

PHOTOGRAPHED BY:
Toner Mitchell

SAMPLE ID#:



DESCRIPTION: Boards stored near beach.

United States Environmental Protection Agency | Office of Solid Waste and Emergency Respose | Publication 9320.7-02FS November 1990

EPA

The Revised Hazard Ranking System: Qs and As

Office of Emergency and Remedial Response
Hazardous Site Evaluation Division (OS-230)

Quick Reference Fact Sheet

The U.S. Environmental Protection Agency (EPA) revised the Hazard Ranking System (HRS) in response to the Superfund Amendments and Reauthorization Act (SARA). These revised HRS Qs and As address the SARA requirements for the revised HRS, specific revisions to the HRS, the impact of the revised HRS on the site assessment and remedial processes, and selection of the cutoff score.

General

What is the Hazard Ranking System?

The Hazard Ranking System (HRS) is a scoring system the U.S. Environmental Protection Agency (EPA) uses to evaluate relative risks to human health and the environment posed by uncontrolled hazardous waste sites. The HRS was originally adopted in 1982 to meet the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), commonly known as Superfund. The HRS is designed to be a simple, numerically-based scoring system that uses information obtained from the initial, limited investigations conducted at a site – the preliminary assessment and the site inspection. Using this information, the HRS assigns each site a score ranging from 0 to 100 based on:

- The likelihood that a site has released or has the potential to release contaminants into the environment.
- The characteristics of the waste (toxicity and waste quantity).
- The people or sensitive environments affected by the release.

In the near future, the Superfund program will issue other Fact Sheets on technical and policy issues that may arise during the implementation of the revised HRS.

How does EPA use the HRS?

EPA uses the HRS as a screening mechanism to determine whether a site should be placed on the National Priorities List (NLP). Sites receiving HRS scores of 28.50 and above are eligible for the NPL.

What is the purpose of the NPL?

The NPL informs the public of sites that EPA has decided require further detailed investigations. These investigations determine whether the sites represent a long-term threat to public health or the environment and, therefore, need remedial action. A site must be on the NPL to undergo remedial action financed by CERCLA's Trust Fund. Remedial action may involve activities such as containment, treatment, and disposal of wastes that will bring site conditions to the point that human health and the environment are protected.

How does the HRS relate to the National Contingency Plan (NCP)?

The HRS is Appendix A to the NCP (40 CFR Part 300). The HRS is the mechanism used to evaluate whether releases should be on the NPL. Sites on the NPL undergo further investigation and remedial action if necessary, according to the NCP.

SARA Requirements

Why wasn't the revised HRS completed by April 1988, as suggested by SARA?

The complexity and scope of issues involved in revising the HRS required EPA to get widespread input to provide a broad spectrum of technical and policy expertise. EPA sought information from a number of sources such as EPA's Science Advisory Board and the public. On three separate occasions, EPA requested public comment on the revisions, to permit consideration of public input at various stages in the development of the revised HRS. The advance Notice of Proposed Rulemaking (52 FR 11513, April 9, 1987) gave the public the opportunity to participate in the design of the revisions. The Proposed Rule (53 FR 51962, December 23, 1988) requested comment and input on the proposed revisions. Finally, the Availability Notice for the Field Test Report on the HRS Proposed Revisions (54 FR 37949, September 14,1988) gave the public the opportunity to reevaluate the proposed rule against its performance in the field test. EPA received over 2,500 comments (from approximately 145 commenters). The analysis and careful consideration required to evaluate all these inputs contributed to the delay in meeting the SARA-suggested deadline. The Agency feels, however, that the delay was necessary to satisfy the SARA requirements in developing a regulation of such significance.

What specific revisions does SARA require?

Section 105 requires:

- EPA to amend the HRS to assure "to the maximum extent feasible, that the Hazard Ranking System accurately assesses the relative degree of risk to human health and the environment, posed by sites and facilities subject to review."
- The HRS to assess human health risks associated with contamination or potential contamination of surface waters, either directly or as a result of runoff, taking into account the uses of these waters for recreation and the potential migration of any contaminant through surface water to downstream sources of drinking water.
- The HRS to take into account:
  - Damage to natural resources that may affect the aquatic human food chain.
  - Contamination or potential contamination of ambient air.

Section 118 requires EPA to:

- Give a high priority to sites where contamination has resulted in the closing of drinking water wells, or has contaminated a principal drinking water supply.

Section 125 requires EPA to:

- Revise the HRS to assure appropriate consideration of sites that contain substantial volumes of fly ash and other wastes generated primarily by combustion of coal or other fossil fuels. The assessment must consider:
  - Quantity, toxicity, and concentration of hazardous constituents present in such wastes.
  - Extent of, and potential for, release of such constituents into the environment.
  - Degree of risk to human health and the environment posed by such constituents.

Specific Revisions

Is the revised HRS a risk assessment?

No. As required by CERCLA, EPA's Superfund program focuses its resources on the highest priority sites. Consequently, initial studies like preliminary assessments (Pas) and site inspections (SIs) are modest in scope and performed on a large number of sites . This has placed certain constraints on the HRS.

While not a risk assessment, the HRS does provide a measure of relative risk among the universe of potential NPL sites. The HRS is used as a screening tool to identify those sites that represent the highest priority for further investigation and possible cleanup

under CERCLA. Its purpose is not to fully characterize the source and the extent of the contamination. Rather, its purpose is to evaluate the potential of uncontrolled hazardous substances to cause damage to human health or to the environment. Uniform application of the HRS nationwide enables EPA to evaluate sites and relative to each other with respect to actual or potential hazards.

EPA uses risk assessments to provide a better overall indication of potential threats. Such evaluations are performed on NPL sites during the remedial phase of the Superfund program. This evaluation serves to characterize the actual threat posed by the site in order to plan the appropriate remedial action to be undertaken at the site.

How extensive are the revisions in the HRS?

In general, it is fair to say that every factor has been revised in some way. Some of the most important changes are:

- A fourth pathway, the soil exposure pathway (named onsite exposure in the proposed HRS), has been added to address direct contact problems.
- The food chain threat has been added to the surface water pathway.
- Extra emphasis is placed on those sites that result in actual human exposure, as opposed to potential exposure.
- The toxicity factors have been revised to include consideration of chronic noncarcinogenic, carcinogenic, and acute effects. (The original HRS considered only acute toxicity.)
- Targets are now weighted according to their distance from a site or the amount of dilution likely to occur.
- Environmental targets are given a more comprehensive evaluation and greater weight.
- The air pathway can be scored for potential release. (The original HRS scored only observed releases.)

How has EPA addressed the requirements of SARA Section 125?

EPA addressed the requirements as follows:

- *Waste quantity:* The revised HRS incorporates a tiered approach for calculating the waste quantity factor. This approach uses the best data available at a site to calculate waste quantity, including constituent concentration data, if adequate.
- *Extent of and potential for release:* The revised HRS provides criteria for determining when an observed release is significantly above background, and adds factors that improve the way the HRS evaluates the potential for hazardous substances to be released.
    - *In the ground water pathway,* such factors include the revised depth to aquifer and mobility factors.
    - *In the surface water pathway,* potential-to-release by overland flow and flooding is assessed. In addition, the persistence factor is revised to include mechanisms for attenuation other than biodegratdation, providing a more accurate assessment of the potential for hazardous substances to migrate.
    - *In the air pathway,* a potential-to- release mechanism is added, which takes into account source type, source size, and mobility.
- *Degree of risk:* The revised HRS improves the toxicity factor, improves calculation of waste quantity, adds the mobility factor, revises the potential-to-release criteria, uses health-based and ecological benchmarks, and adds dilution and distance weighting .

What pathways does the revised HRS consider?

The revised HRS continues to consider risks in the ground water, surface water, and air pathways. A new pathway, soil exposure (called onsite exposure pathway in the proposed HRS), has been added to account for ingestion, dermal contact, and other

exposures related to materials at the surface that contain hazardous substances.

Does the revised HRS give more weight to one pathway (for example, ground water) than others?

No. The maximum possible number of points is the same for each of the four pathways.

Does the revised HRS consider hazards to the environment as well as hazards to public health?

Yes. The revised HRS takes a more comprehensive approach to evaluate sensitive environments. The revised HRS expands the list of sensitive environments considered to include lands and waters that have been legally designated as protected areas by either the Federal government or the States.

Potentially contaminated sensitive environments are distance weighted; in the surface water environmental threat, actual contamination of sensitive environments is evaluated based on ecological benchmarks. The weight assigned to sensitive environments has been capped at 60 percent of the weight assigned to human targets, to reflect that human health threats receive a higher priority. However, serious environmental problems can score above the HRS cutoff.

How does the revised HRS take into account people who are actually being exposed to contaminants, as opposed to those potentially exposed?

The target factors for all pathways are assigned a higher value if contaminants are found in drinking water wells or intakes, school playgrounds, residences, etc. For example, if a contaminant's concentration exceeds a health-based benchmark such as a Federal drinking water standard in a drinking water well, then greater weight is assigned to those persons drinking the water, regardless of their distance from the site. Potentially exposed populations are evaluated based on their distance from the site, or the dilution expected to occur at the point of exposure within the target distance limit. This is because, under most circumstances, the concentration of hazardous substances declines as contaminants migrate from a site.

What new types of sites will the revised HRS add to the NPL?

The revised HRS considers contamination of natural resources that can affect the aquatic human food chain, making it likely that sites that may be contaminating aquatic organisms will be listed. Also, certain direct contact problems, especially those involving contamination of residential and school property, are likely to have higher scores under the revised HRS. Serious environmental impacts are likely to score above the cutoff score. Sites that result in high levels of known exposure, even if only small populations are involved, should score relatively higher on the revised HRS.

Does the revised HRS consider direction of ground water flow?

Not directly. The revised HRS considers flow direction indirectly in the method used to evaluate target populations. If wells have not been contaminated by the site, as might be assumed of upgradient wells, the wells are scored for potential contamination, rather than actual contamination, and the population drawing from those wells is distance weighted. Conversely, if wells have been contaminated, as might be assumed of downgradient wells, the wells are scored for actual contamination and receive the higher observed contamination score. Under this scoring scenario, the populations drawing from the upgradient wells would receive a lower score than those with observed contamination downgradient of the site, and with target distance weighting, the upgradient population would have to be substantial before it could receive a large number of scoring points.

Site Assessment Process

Does the revised HRS affect any sites currently on the NPL?

No. CERCLA Section 105(c)(3), added by SARA, specifically states that it is not necessary for EPA to rescore sites that were placed on the NPL using the original HRS.

Will EPA rescore sites that have already been scored on the original HRS, but did not meet the 28.50 cutoff?

Not necessarily. Sites below the cutoff

using the original HRS will not be systematically evaluated with the revised HRS. However, if either EPA's Regional Offices or the States receive additional information, they may elect to rescore sites that they consider threats to public health and/or the environment, but that did not qualify for listing under the original HRS. This may be the situation with sites that have problems the original HRS did not address, but which the revised HRS does – for example, human food chain impacts or the potential for contamination of ambient air.

When will the first sites be proposed for the NPL under the revised HRS?

The first update under the revised HRS is scheduled for early 1991.

How will EPA gather information to score a site using the revised HRS?

In general, EPA will follow the same steps as it did with the original HRS, although the information gathered may differ. The site assessment portion of the Superfund program (the portion before the sites are proposed for the NPL) is intended to identify sites representing the highest priority for cleanup. The process begins with site discovery, or the notification of EPA of possible releases of hazardous substances. These potential sites are then entered into CERCLIS, EPA's inventory of potential hazardous waste sites.

A preliminary assessment (PA) is performed on all sites entered into CERCLIS to determine whether a site merits further action. The PA identifies hazardous substances related to the site, potential pathways (ground water, surface water, air, and soil exposure), the likelihood of release, target populations, and sensitive environments. The PA is a low-cost review of existing reports and documentation about the site to determine whether the site potentially poses a problem.

If the site warrants further investigation, a site inspection (SI) is performed. The SI involves collecting additional information to better understand the extent of the problem at the site, screen out sites that will not qualify for listing, and obtain data necessary to calculate an HRS score. The SI usually includes collection and analysis of environmental and waste samples to determine what substances are present at the site and whether they are being released.

How many sites will be added based on revisions to the HRS?

The number of sites to be listed is a function of several variables, such as resources, site characteristics, and Regional priorities, among others. Some of these variables are independent of the revisions to the HRS. Historically, 5-10 percent of the sites evaluated are eventually placed on the NPL. Currently, approximately 33,000 sites are included in CERCLIS, EPA's inventory of potential hazardous waste sites. To date, approximately 31,000 sites have received a preliminary assessment. At 19,000 of these sites, the Agency has decided that further Federal action is not appropriate. Approximately 12,000 sites are still being evaluated. The Agency has placed over 1,200 on the NPL and will continue to list sites expeditiously using the revised HRS. Based on past rates of listing, the Agency expects to list approximately 100 sites per year.

Does the revised HRS retain its usefulness as a screening tool?

Yes. While requiring more data and more calculations than the original HRS, the revised HRS still remains within the scope of the site assessment process. The Agency revised the proposed HRS to make it simpler. The amount of data and the number of calculations required to score a site will vary among sites. Most sites do not require calculating all factors, because all four pathways are not always affected. EPA is developing a software package that will perform these calculations. This package will not only facilitate scoring sites, but also significantly lessen the possibility of errors.

Remedial Process

Are sites cleaned up according to their HRS scores?

No. The HRS does not determine whether cleanup is possible or necessary, or the amount of cleanup needed; these issues are considered in the more detailed investigations EPA undertakes to assess the nature and extent of the public health and environmental risks associated with the site. In planning these remedial investigations, EPA considers the HRS score, along with State priorities, further site data, other response alternatives, and other appropriate factors.

Who pays for cleaning up an NPL site?

Site cleanup can be financed in several ways:

- The individuals or companies responsible for the problems can clean up voluntarily with EPA or State Supervision.
- The responsible party or parties can be ordered to clean up by Federal or State legal action.
- A State or local government can choose to assume the responsibility to clean up without Federal dollars.
- The Trust Fund can pay for the cleanup, then seek to recover the costs later from the responsible party or parties.

How does the cleanup proceed once a site is on the NPL?

The cleanup process generally involves these steps:

- Take any measures necessary to stabilize conditions, which might involve, for example, fencing the site or removing aboveground drums or bulk tanks.
- Undertake initial planning activities to scope out a strategy for collecting information and analyzing alternative cleanup approaches.
- Conduct a remedial investigation to characterize the type and extent of contamination at the site and assess the risks posed by that contamination
- Conduct a feasibility study to analyze various cleanup alternatives. The feasibility study is often conducted concurrently with the remedial investigation as one project.
- Recommend a cleanup alternative. The public is given the opportunity to comment on the recommended alternative.
- Design the remedy.
- Implement the remedy.

Consideration of Removals

If EPA or a private party removes waste from a site, will EPA include the removed waste in the waste quantity score?

The Agency will consider response actions done prior tot the site inspection. EPA believes that considering response actions in HRS scores will provide increased incentives for rapid response action. However, where EPA cannot adequately determine the amount of hazardous constituents remaining onsite, a minimum value will be assigned to the hazardous waste quantity factor.

Cutoff Score

How did EPA originally select 28.50 as the cutoff score for including sites on the NPL?

The HRS score of 28.50 was chosen as a management tool because it would yield an initial NPL of at least 400 sites as suggested by CERCLA.

After analyzing data from 110 sites where the revised HRS was tested, EPA has decided not to change the cutoff score at this time.

Why is EPA keeping the same cutoff score for the revised HRS?

Because the HRS is intended to be a screening system, the Agency has never attached significance to the cutoff score as an indicator of a specific level of risk from a site, nor has the Agency intended the cutoff to reflect a point below which no risk was present. EPA does not mean to imply that the score of 28.50 precisely distinguishes between a "risky" site and a "nonrisky" site. Nevertheless, the cutoff score has allowed the Agency to set priorities and to move forward with studying and, where appropriate, to clean up hazardous waste sites scoring above 28.50 in the past have been shown to present risks.

What kinds of analyses did EPA perform to support its cutoff score decision?

As outlined in the December 1988 proposed HRS, the following three basic approaches were used to

obtain some estimate of equivalence between the original and revised HRS scores. The approaches used to define "equivalent to 28.50" included:

- A statistical analysis to determine what revised HRS score best correlates to 28.50.
- A determination of what percentage of potential sites in CERCLIS (EPA's inventory of potential hazardous waste sites) that score above 28.50 on the original NPL and the setting of a cutoff that yields the same percentage.
- An examination of the risk levels that correspond to the original HRS score of 28.50 and a determination of what revised HRS score corresponds to that risk level.

These analyses indicate that there is not sufficient information to conclude that any change in the current cutoff score of 28.50 is needed at this time.

Will keeping the HRS cutoff score at 28.50 reduce the number of sites added to the NPL?

Historically, the Agency has added 100 to 125 sites per year to the NPL. The Agency expects to list a similar number of sites each year using the revised HRS.

Will the HRS cutoff score be re-evaluated and revised?

EPA will continue to evaluate the effectiveness of the cutoff score to ensure it is serving its purpose as a management tool to identify the top priority hazardous waste sites.

For Further Information, Contact:

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